

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSARA, INC.

Petitioner

v.

MOTIVE TECHNOLOGIES, INC.,

Patent Owner.

Case IPR2025-00574

U.S. Patent No. 11,875,580

PATENT OWNER'S SUR-REPLY TO REPLY

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	CLAIM CONSTRUCTION	2
III.	SUR-REPLY	6
A.	Ground 1	6
1.	Limitation [1B]	6
2.	Limitation [1A]	7
3.	Limitation [1C]	8
4.	Limitations [1D] and [1E]	9
5.	Claims 2-4	10
B.	Ground 2	11
1.	Claim 1	11
2.	MTC	13
3.	Claims 2, 3, and 5	15
C.	Ground 3	18
1.	MTC	18
2.	Limitations [1A]-[1E]	21
3.	Claims 2-4	21
D.	Ground 4	22
1.	MTC	22
2.	Claims 5-7	24
E.	Ground 5	26

F. Ground 6	26
IV. CONCLUSION.....	27

TABLE OF AUTHORITIES

CASES

<i>Cambridge Mobile Telematics, Inc. v. Sfara, Inc.</i> , IPR2024-00952, Paper 12 (PTAB Dec. 13, 2024)	1, 5
<i>HD Silicon Solutions LLC v. Microchip Technology Inc.</i> , 127 F.4th 919 (2025)	13
<i>In re McLaughlin</i> , 443 F.2d 1392 (C.C.P.A. 1971)	20, 27
<i>Intel Corp. v. Qualcomm Inc.</i> , 21 F.4th 784 (Fed. Cir. 2021)	10, 14, 18
<i>Intelligent Bio-Systems v. Illumina Cambridge</i> , IPR2013-00517, Paper No. 87 (February 11, 2015)	2, 7
<i>Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.</i> , 821 F.3d 1359 (Fed. Cir. 2016)	7, 11, 13, 16
<i>InTouch Techs., Inc. v. VGO Commc'ns, Inc.</i> , 751 F.3d 1327, 1351 (Fed. Cir. 2014)	19
<i>IriusRisk Inc. et al. v. ThreatModeler Software, Inc.</i> IPR2023-00656, Paper No. 33 (FWD) (October 2, 2024)	19, 20, 27
<i>PAR Pharm., Inc. v. TWI Pharms., Inc.</i> , 773 F.3d 1186 (Fed. Cir. 2014)	14, 18
<i>Revvo Technologies, Inc. v. Cerebrum Sensor Technologies, Inc.</i> , IPR2025-00632, Paper 20 (Director Nov. 3, 2025)	1, 5
<i>Salazar v. Procter & Gamble Co.</i> , 414 F.3d 1342 (Fed. Cir. 2005)	3
<i>Tesla, Inc. v. Intellectual Ventures II LLC</i> , IPR2025-00340, Paper 18 (Director Nov. 5, 2025)	1, 5

<i>UCB, Inc. v. Actavis Labs, UT, Inc.,</i> 65 F.4th 679 (Fed. Cir. 2023).....	22
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OTHER AUTHORITIES

<i>Consolidated Trial Practice Guide</i> (Nov. 2019).....	2, 11
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TABLE OF EXHIBITS

Ex. No.	Description
2001	U.S. Patent No. 11,798,187, “Lane detection and distance estimation using single-view geometry” (Oct. 24, 2023)
2002	Provisional Application No. 62/975,360, filed on Feb. 12, 2020
2003	Declaration of Scott Andrews (Revised)
2004	Declaration of Hector Ribera
2005	Declaration of Ryan J. Marton
2006	Declaration of Carolyn Chang
2007	Joint Claim Construction and Prehearing Statement under P.L.R. 4-3 in <i>Motive Technologies, Inc. v. Samsara, Inc.</i> , Case No. 24-cv-00902-JD, Appx A, Dkt. 157-1, (N.D. Cal., January 15, 2026)

I. INTRODUCTION

Samsara’s reply criticizes Motive’s interpretation of “predictive model” and other terms but fails to apply, or even mention, its own interpretations. Before filing its reply, in the co-pending litigation, Samsara adopted several constructions of claim terms inconsistent with positions it has taken in this IPR. EX_2007. In the Petition, Samsara “construed the terms according to their ordinary and customary meanings” and it stated that “[n]o term needs an explicit construction to resolve the controversy between the parties.” Pet., p.8.

Aside from criticizing Motive’s interpretation of predictive model as “narrow,” in the Reply, Samsara failed to address the construction of this term as the Board requested. I.D. at p. 9. But more importantly, Samsara failed to disclose or explain why its litigation-inspired constructions were inconsistent with its positions here. This alone should be grounds to withdraw the Institution of this proceeding. *Revvo Technologies, Inc. v. Cerebrum Sensor Technologies, Inc.*, IPR2025-00632, Paper 20, p.3 (Director Nov. 3, 2025) (precedential) (citing *Cambridge Mobile Telematics, Inc. v. Sfara, Inc.*, IPR2024-00952, Paper 12, p.8–9 (PTAB Dec. 13, 2024) (informative)); *see also Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00340, Paper 18, 3-4 (Director Nov. 5, 2025).

Further, the Reply does little to advance Samsara’s substantive positions in the Petition, attempting instead to improperly gap-fill the holes the POR identified,

adding a new expert declaration and over 20 exhibits. *See Intelligent Bio-Systems v. Illumina Cambridge*, IPR2013-00517, Paper No. 87 (February 11, 2015). But Samara provides no explanation of why all this new evidence “could not have been presented earlier” rendering the Reply improper. *See Consolidated Trial Practice Guide* (Nov. 2019), pp.73-45.

II. CLAIM CONSTRUCTION

The Board invited the parties to address the construction of the term “predictive model.” I.D., p.9. The POR explained Motive’s position. POR, p.28-30. The Reply incorrectly argues that “Motive appears to argue disavowal.” Reply, p.3. But the plain and ordinary meaning of the term “predictive model,” read in the context of the ’580 patent, does not include a geometric approach. Geometric computation of the horizon line over a road using the inherent geometry of lane lines is understood in the art, as noted in the specification, to be an alternative approach to the inventive predictive model. *See* EX1061, 12:17-25 (Mr. Andrews explaining that “a predictive model is a model that will recognize these lines without using a geometric approach”); *id.*, p.42:13-19 (discussing the “fairly well-known geometric algorithm.”). The specification passage cited in reply illustrates this point: “**In an embodiment**, the neural network is trained to predict lane and horizon key points ... **In other embodiments**, a geometric process can be performed to identify lane and horizon lines.” EX_1001, p.8:7-14 (emphasis

added). The specification makes clear that inventive “predictive model” embodiment is not the “other embodiments” using a geometric process. *See* EX_1061, p.14:20-15:6.

As already explained, the prosecution further shows how the plain and ordinary meaning of predictive model does not encompass the geometric approach, even when combined with predictive models to identify the road lane lines used in the geometric calculations. Ex_2003, ¶69; Ex_1001, p.8:39-46; *see also*, Ex_1002, p.0145-0146. Samsara points to the Allowance, arguing that the Examiner may not have agreed with the inventor’s arguments. Reply, p.4. But for claim interpretation, and particularly for disavowal as Samsara alleges is Motive’s position, what is relevant is the position the applicant took, not the Examiner’s. *See Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1346–48 (Fed. Cir. 2005).

Given the failed arguments presented in the Petition, on reply Samsara adopts an overly broad interpretation of “predictive model” and of “identifying [a horizon line] using a predictive model” that is not only inconsistent with the specification and prosecution history but contrary to its litigation-inspired construction. The gap-filling arguments allege that identifying the horizon line using a predictive model could be met by “indirect” uses of a predictive model, subsequent uses of the output of a predictive model, or pre- and post- processing algorithms that are allegedly not excluded by the ’580 patent.

But on January 15, 2026, in the co-pending litigation, the parties submitted competing proposed constructions for this term:

Claim Language	Motive's Proposed Construction and Supporting Evidence	Samsara's Proposed Construction and Supporting Evidence ¹
"predictive model" (claims 1, 3, 4 of the '580 Patent)	<u>PROPOSED CONSTRUCTION:</u> "model that predicts values using non-geometric calculation"	<u>PROPOSED CONSTRUCTION:</u> "a deep learning or other AI model trained to directly identify the one or more lines"

EX_2007, p.3 (excerpt). Motive's proposal is consistent with its positions in this IPR. While Samsara's Reply characterizes Motive's construction as "narrow" (Reply, p.1) it failed to address its own construction.

The constructions Samsara proposed in the joint statement are inconsistent with its positions here. For example, Samsara argues that "[w]hen Khan/Ali performs initialization, the output of the CNN is input into the horizon estimation step to identify the horizon line." Reply, p.18-19. But Khan and Ali's CNN is trained to determine lane lines, not "trained to **directly** identify" the horizon line. EX_1061, 31:23-25. Using "the output of the CNN" to subsequently estimate the horizon line with a geometric approach is not "directly identifying" the horizon line. EX_1061, p.40:12-41:15. Samsara also argues that Ali "uses RANSAC, a well-known predictive modeling *tool*, to find the best fitting horizon line across the video." Reply, p.20. But RANSAC is not a deep learning or AI model; it is not a model at all. Ex_2003, ¶65. Samsara also argues that "Figure 3 entire End2End algorithm is a predictive model." *Id.* But the End2End algorithm (Khan's Figure

3) is neither “a deep learning or other AI model” nor is it trained to **directly** identify the horizon line; it uses the geometric approach. *See* Ex_2003, ¶95.

Similarly, with respect to the order of the steps in claim 1, while in the Petition Samsara argued that “neither the claims themselves, nor the specification require a specific order for this element [1C]” (Pet., p.28), in district court Samsara argues that “[t]he steps of the claim must be performed in the following order ... Step [c] must be performed after step [b].” EX_2007, p.4-5. These positions are diametrically opposed.

Where as here, petitioner is “taking inconsistent claim construction positions before the Board and a district court ... petitioner should, at a minimum, explain why alternative positions are warranted.” *Revvo Technologies, Inc. v. Cerebrum Sensor Technologies, Inc.*, IPR2025-00632, Paper 20, p.3 (Director Nov. 3, 2025) (precedential) (citing *Cambridge Mobile Telematics, Inc. v. Sfara, Inc.*, IPR202400952, Paper 12, p.8–9 (PTAB Dec. 13, 2024) (informative)). This failure alone should suffice to vacate the original institution and terminate these proceedings. *See Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00340, Paper 18, 3-4 (Director Nov. 5, 2025).

III. SUR-REPLY

Motive stands by all the arguments it advanced in the POR which show that the Petition fails to meet the statutory requirements. Below Motive addresses Samsara's reply arguments.

A. Ground 1

1. Limitation [1B]

Samsara argues that a POSITA would understand Choe to teach the use of predictive models 124 for sensor calibration because Mr. Andrews initial interpretation did so. Reply, p.7. But Mr. Andrews explains why this is not the case. *See* EX_2003, p.88-91. While “Choe refers generically to ‘a set of rules, algorithms, and/or predictive models 124’ all together as being generated or trained by machine learning engine 122 ‘for a variety of purposes’ ... It is the ‘algorithms’ generated by ‘machine learning engine 122’ that are used for sensor calibration in Choe, not the ‘predictive models’ or the ‘set of rules.’” *Id.*

Samsara then argues that “Choe does not specify the horizon line is based *only on* hardware settings.” Reply, p.7. But this is irrelevant as Choe does not disclose or suggest identifying the horizon line in another way much less using a predictive model as is required by claim 1. Petitioner arguments about what Choe does not disclose or what it does not “prohibit” completely miss the point.

Petitioner’s burden is to show that Choe discloses what is claimed, not that it fails to prohibit functionality it does not disclose.

2. Limitation [1A]

The Reply, at pages 8-9, improperly “presents new issues by changing the unpatentability rationale from express reliance on [Dr. Darrell’s testimony and Applicant’s admissions], to asserting that” Choe itself discloses the limitation “in both its online and offline calibration processes.” *See Intelligent Bio-Systems v. Illumina Cambridge*, IPR2013-00517, Paper No. 87, p. 15 (February 11, 2015). “[P]etitioners in the IPR proceedings [must] adhere to the requirement that the initial petition identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each claim.’” *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016). Thus, Samsara’s new arguments should be disregarded.

In any case, none of the new evidence in the Reply shows anything but Choe’s processing of single frames in isolation, never as video. *See Reply*, pp.9-10. Neither the online calibration nor the offline calibration shows any reception of video because the Choe system operates on single frames. For example, Samsara’s presumption that sensor data used by server 103 must include video is contradicted by Choe: Choe explains that “[f]or camera 211, sensor data may

include **an image**,” not a video. EX_1005, [0045]. Similarly, Samsara provides no evidence that the CAN bus is used to receive anything but single frames.

Reply, p.9.

Further, as Mr. Andrews explained, figures 6A and 6B in Choe simply show two examples of single frames, one with a line that is too low and one with a line that is too high. *See* EX_1061, p.103:2-104:4. Neither the frames nor the associated description mention any operation on video as opposed to single, isolated frames, and there is no mention whatsoever of reception of a video over a network. In fact, looking at the frame ids of the frames in figure 6A and 6B, the frames are shown in reverse order, indicating that these figures do not show operation on a sequential video. *Id.*

3. Limitation [1C].

Motive does not simply allege that “Choe does not compute a camera parameter based on the horizon line.” Reply, p.11. Choe does not describe computing the alleged camera parameters (pitch, yaw, and roll) based on a **predictive-model-identified** horizon line. Samsara’s reliance on the hardware-settings based “initial horizon line” is misplaced because it is not identified using any predictive model. Further, determination of a “correction value” that can subsequently be used **for calibrating** a pitch angle of the camera is not computing

the actual camera parameters (pitch, yaw, or roll) based on a predictive-model-identified horizon line as [1C] requires.

Notably, Samsara also provided a litigation-inspired construction of “camera parameter”: “a property of the camera itself.” EX_2007, p.2. Yet the Reply does not explain how pitch, yaw, and roll or the “correction values” calculated in Choe from user input are properties of the camera itself.

4. Limitations [1D] and [1E]

The Reply does not add any additional evidence to show these limitations in Choe. Reply, p.12-13. The use of a video camera to extract single frames used for calibration does not disclose the claimed generation and transmission of an overlaid video. As shown in the POR and above for [1A], figures 6A and 6B of Choe simply show operation on single frames, not the generation of an overlaid video. Further, Samsara fails to show where the alleged overlaid video is generated and where or how it may be transmitted to the annotator device as required by [1E]. Samsara alleges that “Figure 6A shows screenshots from the annotation devices’ graphical user interface” (Pet., p.30), but does not identify any “transmission” of an overlaid video from rendering module 401 to the annotation device. There is no such transmission because “the **first image** with the horizon

line superimposed thereon is rendered by 2D module 401 and displayed within a first display area of display device 405.” *See* EX_1005, [0046]-[0050].

5. Claims 2-4

a) Claim 2

Simply describing a calibration algorithm and showing lane lines on a frame, as Samsara argues in the Reply, is insufficient to show that a predictive model was used to identify the lanes as claim 2 requires. Reply, pp.13-14.

b) Claims 3 & 4

Samsara’s reply arguments improperly interpret the additional claim limitations of claims 3 and 4 as superfluous. *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 810 (Fed. Cir. 2021) (“It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous.”). Using Samsara’s “indirect” computing interpretation, if steps [1B], identifying a line using a predictive model, and [1C], computing a camera parameter based on the line, are met, claims 3 and 4 are necessarily met. Thus, Samsara’s reply arguments are flawed.

B. Ground 2

1. Claim 1

Samsara admits that, contrary to what it argued in the Petition, in Khan, “Mask-RCNN” is not a predictive model used to identify lane and horizon lines. Reply, p.18, n3. The other alleged predictive model, “RANSAC,” is not a model at all; it “provides a process for fitting a model to experimental data,” what Samsara now calls “a predictive modeling *tool*.” Ex_2003, ¶65, Reply, p.20. But a predictive modeling “tool” is not a predictive model. Clearly, RANSAC does not meet Samsara’s litigation-inspired construction. See EX_2007, p.3. And “Khan does not describe using RANSAC to predict the horizon line.” Ex_2003, ¶65.

Khan/Ali does not describe the use of a predictive model to identify the horizon line either. It is undisputed that Ali uses a geometric approach to identify the vanishing points of the horizon line using “three co-linear points existing on the road plane having known real world length ratios” using trigonometry. EX_1008, pp.1103-1104. Samsara’s Reply attempts to gap fill its Petition with additional testimony from its expert. Reply, pp.19-20 (citing EX1085). This is improper and should be ignored. See *Consolidated Trial Practice Guide* (Nov. 2019), p.73-45; see also *Intelligent Bio-Systems*, 821 F.3d, p.1369. Samsara now argues that Ali’s geometric approach uses the lane lines output from Khan’s CNN and thus it

indirectly “uses” the CNN to identify the horizon line. Reply, p.18-20. This argument is flawed for many reasons.

This theory fails because it stretches the claim language beyond its plain and ordinary meaning considering the specification and prosecution history and fails as a matter of simple logic. The Reply argues that Mr. Andrews agreed that “Ali’s horizon estimation algorithm ‘uses’ Khan’s CNN.” Reply, p.19. He did not. EX_1061, 43:18-44:1 (Mr. Andrews agreed that “it would use the three lane lines that are detected” using the CNN of Khan). But the claim requires the “**identifying**” of the horizon line in the video to be done “using a predictive model.” This does not include using **the output** of a predictive model that was **used** in several blocks before the identifying step, when the identifying step instead uses a geometric approach. Particularly when the inventors expressly distinguished this exact functionality in the KWANT1’s prior art. Ex_1002, p.0145-0146.

As a matter of simple logic, just like cooking a fish does not entail using the rod that captured it, using the output of a predictive model to geometrically compute a horizon line is not the same as using the predictive model to identify horizon lines. Clearly, this stretched interpretation in the IPR is far from Samsara’s proposed litigation construction, requiring the model to be trained to “directly” identify the horizon line. EX_2007, p.3.

To support this stretched interpretation, Samsara now argues that “[t]he ’580 patent does not limit the recited predictive model to a single step/algorithm ... [n]or does the ’580 patent exclude pre- or post-processing from the predictive model.” Reply, p.20. First, the claim language does exclude this reading; the predictive model must be used for the line identifying step, not for earlier processing. Further, Samsara’s arguments ignore that the ’580 patent expressly distinguishes Khan/Ali’s geometric approach to determine the horizon line (“in other embodiments”) and the inventors distinguished KWANT1’s use of a CNN to determine lane lines followed by the same geometric approach to determine the horizon line from the claimed invention. Interpreting this term broader than the inventors described it would be improper. *See HD Silicon Solutions LLC v. Microchip Technology Inc.*, 127 F.4th 919, 921 (2025).

In addition, Samsara’s attempt to gap-fill the Petition in the Reply (*see* pp. 20-21), providing alternative disclosures in Khan/Ali for other claim limitations that were not provided in the Petition, is improper and should be ignored. 821 F.3d at 1369.

2. MTC

Dr. Darrell’s motivation to combine arguments are conclusory statements that do not show the “why” an automotive sensor system designer of ordinary skill

starting with Choe would have found it obvious to use Khan and Ali to arrive at the claimed invention. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 424 (2007). Choe consistently describes that “a horizon line is determined based on the camera’s hardware settings.” Ex_1005, p.[0015]; Ex_2003 ¶47. Simply lacking disclosure about how to use predictive models for sensor system calibration fails to identify any shortcoming of using Choe’s hardware-settings-based horizon line determination. *See PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197-98 (Fed. Cir. 2014); *see also Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 800 (Fed. Cir. 2021); *see also, KSR Int’l Co.*, 550 U.S., p.425 (discussing “the known wire chafing problems”).

Based on Choe’s vague reference to “predictive models,” Samsara argues that because Choe “does not explicitly disclose which predictive models it uses, a POSA would have used other references that explain how predictive models were used, especially for camera calibration.” Reply, p.15. Samsara argues that Motive’s expert also found this “shortcoming.” *Id.* However, Samsara misses the point. What Mr. Andrews found is that Choe does not teach the use of predictive models “for any purpose,” much less for identifying a horizon line. *See EX_2003*, p.90 (“nothing in Choe teaches or suggests the use of a predictive model to identify a horizon line.”) For example, based on Samsara’s alleged motivation in Choe, a POSITA could have found information about using predictive models for

calibrating LIDARs or RADAR sensors yet still use Choe’s hardware-settings based horizon line determination or use the well-known geometric approach. There is no teaching in Choe to suggest replacement of this hardware-setting horizon line determination. Thus, combining Khan/Ali’s geometric approach to replace Choe’s hardware-settings-based horizon line determination is clearly based on hindsight. EX_2003, p.74.

Moreover, all the alleged benefits of accuracy and speed of using Khan/Ali’s approach in Choe are baseless as Choe uses its initial horizon line estimation (based on hardware settings) to provide a baseline for its “manual calibration” approach. See EX_1061, p.79:82-4 (Mr. Andrews explaining that the accuracy of the initial candidate horizon line estimation “doesn't matter. Because ... Choe’s entire approach, is to have the user do the right and left and up and down arrow keys until he sees an image with the horizon at the right place.”). Thus, aside from hindsight, Petitioner does not provide any need or problem motivating the combination.

3. Claims 2, 3, and 5

a) Claim 2

Samsara now alleges that “Khan/Ali’s lane boundary marker detection algorithm, inspired by Mask-RCNN” is the predictive model of claim 2. Reply,

p.21. But the Petition clearly stated that “[i]n Khan, the predictive model used to identify lane and horizon lines is called a ‘Mask-RCNN.’” Pet., p.41. As admitted by Samsara this is simply wrong. Reply, p.18, n.3. Samsara argues that the “same predictive model is used to identify a horizon line because the output is used as an input to Ali’s horizon estimation algorithm.” Reply, p.21. As discussed above regarding claim 1, this “indirect use” argument does not meet the claim language and was not presented in the Petition. Similarly, the “End2End detection algorithm” was not mentioned in the Petition with respect to claim 2 (only for claims 3 and 4). Pet. 41-43. Thus, the reliance on this new theory on reply not only fails but should be ignored. 821 F.3d at 1369.

b) Claim 3

Samsara attempts to broaden the scope of the arguments it presented in the Petition because it never identified the IPM computation with respect to the predictive model of claim 1. See Reply, p.23-24. In any case, Samsara’s arguments based on the Mask-RCNN and RANSAC algorithms used elsewhere in the End2End pipeline also logically fail to show the claimed “**predicting** the at least one camera parameters **using** the predictive model.” Samara admits that in Khan and Ali, “camera parameters are **predicted** during its Inverse Perspective Mapping (IPM) computation step.” Pet., p.42. Thus, since the alleged predictive

models are **used before** the “IPM computation step,” the predicting that happens at that step cannot be done using the models in prior steps.

c) Claim 4

The Reply incorrectly states that the POR had no arguments regarding claim 4. *See* POR, p.35.

d) Claim 5

The Reply makes clear that the Petition failed to meet the requirements of claim 5. The Petition does not show how “data representing the at least one camera parameter” (“camera height and road plane normal” for Claim 5) is transmitted to the camera device as required in [1G]. *See* Ex_1001, claims 1 and 5. The Reply once again attempts to improperly gap-fill the Petition with a new vague argument about “the purpose” of the combined references but is unable to show a disclosure of this requirement in any of the references. Reply, p.25. The Petition wrongly relied on the transmission of “pitch, yaw, and roll” from Ground 2 and not of camera height and road plane normal it alleged as the camera parameters for claim 5. POR, p.38. Thus claim 5 is not met.

C. Ground 3

1. MTC

The Reply simply restates the flawed arguments provided in the Petition, that because Choe does not have any disclosure about the mentioned “predictive model” a POSITA would be motivated to look to Workman for predictive models to identify a horizon line. But as already explained above, this argument is flawed. There is a logical gap between Choe’s alleged motivation to look for details on a predictive model for generic sensor calibration, something not actually disclosed in Choe, and arriving at Workman’s predictive model specifically trained to identify horizon lines in images of data sets. This gap is clearly filled by impermissible hindsight.

First, failing to provide details about predictive models does not identify any shortcoming in Choe’s hardware-setting horizon line determination approach. *See e.g., Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 800 (Fed. Cir. 2021) (discussing the “the feedthrough problem”); *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1192 (Fed. Cir. 2014) (discussing the “known high viscosity and high interpatient variability of Megace OS” problem); *KSR Int’l Co.*, 550 U.S., p.425 (discussing “the known wire chafing problems”). Samsara failed to identify any

such “known problem” or shortcoming in Choe’s horizon line determination to motivate the combination with Workman.

The Reply does not address the fact that Dr. Darrell based his opinion on hindsight by relying on the disclosure of the ’580 patent, using the Khan and Ali versions, “for putting ... pieces of a ‘jigsaw puzzle’ together.” *See IriusRisk Inc. et al. v. ThreatModeler Software, Inc.*, IPR2023-00656, Paper No. 33 (FWD), p.50, (October 2, 2024) (citing *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014)). Instead, Samsara ignores this and states that Dr. Darrell cites Choe-Workman. Reply, p.26-27.

Further, despite Dr. Darrell’s new declaration, the Petition and his earlier declaration on which the Petition relies, is flawed because it is rooted in the wrong person of ordinary skill in the art, being viewed from the perspective of a computer vision expert, not an automotive system designer. *See Reply*, p.28.

Similarly, the Reply also fails to identify any instance where image-trained predictive models, like Workman’s, have been used to improve the calibration of any automotive sensor system or any other “similar device.” Instead, Samsara cites a generic statement about “knowledge of the horizon line” enabling “a wide variety of applications.” Reply, p. 28. This still fails to show any instance of the predictive models of Workman **being used** to improve the calibration of automotive sensor systems. Similarly, the picture from Figure 5 is simply one of

the images in the “ECD dataset,” which “consist primarily of urban images with large buildings in the back-ground.” EX_1011, p.5. This is not evidence of using Workman’s predictive models to improve an automotive system whatsoever.

Thus Samsara’s alleged motivation in Choe does not provide a reason for a POSITA, allegedly looking for details about predictive models for sensor calibration in an automotive system (which includes many different types of sensors and different calibration steps), to arrive specifically to Workman’s horizon line approach and to apply it specifically to the horizon line determination step. Workman does not disclose any improvement or calibration of automotive sensors systems, much less the specific improvement of the horizon line determination aspect of the calibration of a video capture device on a vehicle. This highly specific combination is clearly based on impermissible hindsight. *See* IPR2023-00656, Paper No. 33, p.52 (citing *In re McLaughlin*, 443 F.2d 1392, 1313-14 (C.C.P.A. 1971); *see also ActiveVideo Networks*, 694 F.3d, p.1327.

Samsara argues that “[t]he knowledge contained [in Workman] would have been available to a POSA to combine with Choe.” Reply, p.29. But elements of a claim “being known” “is not sufficient [to motivate the combination] and is fraught with hindsight bias.” *See ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1327 (Fed. Cir. 2012). It remains “important to identify **a reason** that would have prompted a person of ordinary skill in the relevant field to

combine the elements **in the way** the claimed new invention does.” *See KSR*, 550 U.S. at 418 (emphasis added).

2. Limitations [1A]-[1E]

For these limitations Samsara only argues that Workman, “[w]hen combined with Choe, the combination uses a predictive model on a video because Choe performs camera calibration on videos and video frames.” Reply, p.29. This is wrong as shown above because Choe operates on single frames and so does Workman.

3. Claims 2-4

The Reply also fails to address the arguments presented in the POR. Instead, it improperly presents a new “indirect use” argument: “Since determining the lane lines and camera parameters are downstream in Choe’s pipeline that depend on the initial horizon line, the predicted lane lines and camera parameters are identified ‘using’ the predictive model that identifies the horizon line.” Reply, p.29-20. As described for claim 1 in Ground 1, this “indirect” use argument is based on an improperly broad claim interpretation.

Moreover, it is unclear what “Choe’s pipeline” is supposed to refer to (Choe does not mention the word pipeline) or why lane lines and camera parameters are necessarily downstream. As Samsara admits, Choe does not disclose the details of

the operation of the predictive models, thus it is unclear where if anywhere the predictive models of Choe would be used or for what purpose. Even if Choe did suggest using predictive models for sensor calibration, as Samsara admits, Choe provides no details about how these models would be used, what would be done first or second or where and how the horizon line may be determined with respect to lane lines or camera parameters. For example, Samsara admits that in Khan/Ali, the horizon line is determined using the lane lines, i.e. the lane lines are not downstream. Reply, pp.18-19. Further, in the Petition Samsara argued that the claimed steps did not need to be performed in any order. Pet., p.28. Thus, this too is contrary to Samsara's positions on Reply.

D. Ground 4

1. MTC

On Reply, Samsara first argues that Westmacot does not teach away because the teaching of not doing camera calibration is merely “a preference.” But as the *UCB* case explains, if like here, the reference “criticizes, discredit, or otherwise discourage investigation into the claimed invention” even a “general preference” does teach away. See POR, p.30 (citing *UCB, Inc. v. Actavis Labs, UT, Inc.*, 65 F.4th 679, 692 (Fed. Cir. 2023)). Westmacot's preference is not a “general preference” but the only operation disclosed. Further this is Westmacot's alternative approach to solving the problem the '580 Patent is intended to solve:

camera initialization to enable the use of a monocular dash-cam in a vehicle. *See* EX_1001, 1:21-27. Instead of the calibration method of the '580 patent, Westmacot teaches that its approach can be used “without the use of any other vehicle sensor and without any requiring calibration of the image capture device” which “provides a low-cost solution in which the only equipment that is required to collect the images is a standard vehicle and basic camera, such as a dash-cam.” EX_1010, 5:26-6:4. Thus, Westmacot clearly discourages and criticizes the need to do any sensor calibration of the image capture device and further teaches away from the multi-sensor calibration approach of Choe, which relies on LIDAR and RADAR sensor data for its user-based manual calibration. *See* EX_1004, Figure 6A-6B.

Samsara also incorrectly argues that Westmacot only teaches away of calibration specific to “intrinsic properties of the camera ... not teaching away from calibrating extrinsic properties of the camera such as the camera’s pose relative to the road plane normal.” Reply, pp.30-31. This is simply wrong. The very paragraph in which the absence of calibration is touted refers to “the expected road structure” not some internal camera parameters. EX_1011, 5:26-27 (“Preferably the **expected road structure** is determined using only information derived from image data captured by the image capture device.”). This argument is particularly specious given that Samsara’s litigation-inspired construction of

“camera parameter” is “property of the camera itself.” EX_2007, p.2. Thus, even if it were true that Westmacot only teaches away from calibrating “intrinsic properties of the camera,” that would be precisely the type of camera parameters Samsara believes are relevant to the ’580 patent.

Samsara’s third argument about Choe not teaching “away from computing camera height and the road plane normal” is irrelevant because it does not address any argument in the POR. Reply, p.31.

Samsara’s fourth argument is equally flawed. Samsara argues that Westmacot’s criticism of the type of calibration approach claimed in the ’580 patent supports the motivation to combine because “[i]f Choe had a similar feature, this would decrease the cost of the system.” Reply, p.31. But if the Choe system did not have any sensor calibration as Westmacot suggests, while it may be cheaper, it would not motivate a POSITA to add Westmacot’s computations to a sensor calibration system; the motivation would be to remove sensor calibration altogether and use Westmacot’s approach instead. The system described in Westmacot is just incompatible with Choe’s system. Ex_2003, ¶101.

2. Claims 5-7

Like with Ground 2, the Reply makes clear that the Petition failed to meet the requirements of claim 5. Samsara argues that Motive “attacks references

individually instead of the combination.” Reply, p.32. Not so. Motive identified the deficiencies in the evidence relied upon in the Petition. Samsara was the one that relied on Choe for claim 1 and on Westmacot for claim 5, relying on its prior arguments about Choe. In doing so it omitted critical requirements of claim 5. Samsara failed to disclose how “data representing the at least one camera parameter” (“camera height and road plane normal” of Westmacot used for claim 5) is transmitted to the camera device as required in [1G]. *See* Ex_1001, claims 1 and 5. Samsara attempts to improperly gap-fill the Petition with new arguments. Reply, p.32. The fact remains that the Petition relied on the transmission of “pitch, yaw, and roll” from Ground 2 and not of Westmacot’s camera height and road plane normal relied upon for claim 5. POR, p.38.

The Reply does not address that in Westmacot the “camera height” and “road normal vector” are not computed based on the one or more lines but rather the lane lines are derived from equations that use those camera parameters as input. *See* Ex_2003, ¶102. Moreover, the height and normal in Westmacot are not computed based on any lines identified with a predictive model as claims 5 and 1 require. Nor does the Reply address the point that camera height equation it relied upon does not compute the camera height but instead uses it as an input. POR, pp.57-58.

The Reply incorrectly states that the POR had no arguments for claims 6 and 7. *See* POR, p.53.

E. Ground 5

As noted in the POR, the Petitioner failed to provide any motivation of why a POSITA would combine Choe, Westmacot, Khan, and Ali all together. The Reply admits as much, relying instead on the separate motivations provided for Ground 2 and Ground 4 because according to Samsara these “relate to different parts of Choe’s system,” which they do not. Reply, p.33. But additional motivation was not provided for the Choe, Westmacot, Khan, and Ali combination. For example, other than impermissible hindsight, why would a POSITA find any shortcoming or be otherwise motivated to modify the Choe system with Khan/Ali’s IPM computation algorithm, which Samsara relied upon for its disclosure of the “camera height and road plane normal” (Pet. at 44-45), with the camera height and road plane normal approach of Westmacot? Neither the Petition nor the Reply provides this answer.

F. Ground 6

Similarly, the Reply makes clear that Petitioner did not provide any motivation of why a POSITA would combine Choe with both Westmacot and Workman. Again, “Petitioner’s proposed combination of teachings plainly takes into account knowledge gleaned only from applicant’s disclosure, i.e.,

impermissible hindsight.” *See* IPR2023-00656, Paper No. 33, p.52 (citing *In re McLaughlin*, 443 F.2d 1392, 1313–14 (CCPA 1971); *see also ActiveVideo Networks*, 694 F.3d, p.1327.

IV. CONCLUSION

For the reasons set forth above, Petitioner has failed to demonstrate that claims 1-7 are unpatentable over the prior art.

Respectfully submitted,

Date: March 25, 2026

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CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this Patent Owner Sur-Reply to Reply complies with the type-volume limits of 37 C.F.R. § 42.24(c)(1) because it contains 5553 words, according to the word-processing system used to prepare this petition, excluding the parts of this response that are exempted by 37 C.F.R. § 42.24(c) (including the table of contents, a table of authorities, an exhibits list, a listing of facts, a certificate of service or this certificate of word count, or appendix of exhibits).

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CERTIFICATE OF SERVICE

The undersigned certifies that on March 25, 2026, a complete and entire copy of this PATENT OWNER SUR-REPLY TO REPLY was provided via electronic mail (by consent) to the Patent Owner by serving the correspondence address identified in the Mandatory Notices:

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